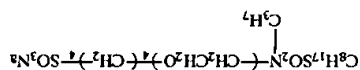


Set Name Query
side by side**Hit Count Set Name**
result set*DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=ADJ*

<u>L7</u>	magnetic powder and barium ferrite and (flame or fire) retardant	16	<u>L7</u>
<u>L6</u>	magnetic powder and barium ferrite and (flame or fire) retardant composit\$5	0	<u>L6</u>
<u>L5</u>	magnetic powder and barium ferrite and flame retardant composit\$5	0	<u>L5</u>
<u>L4</u>	magnetic powder and barium ferrite	1169	<u>L4</u>
<u>L3</u>	EP0945478	0	<u>L3</u>
<u>L2</u>	magnetic powder	27733	<u>L2</u>
<u>L1</u>	magnetic powder and EP0945478	0	<u>L1</u>

END OF SEARCH HISTORY



The coating amount of addenda was per one side the amount of silver was 1.6 g/m² of one side.

1) Evaluation of Sensitivity

The thus obtained photographic material samples each were sandwiched between radiographic intensifying screens SRO-250 (available from Konica Corp.), exposed to X-rays through penetrometer type B and processed using a roller transport type automatic processor, SRX-501 (available from Konica Corp.), and the following developer and fixer solutions, under the process-1 or process-2 condition.

Process-1

Developing	35° C.	14.0 sec.
Fixing	34° C.	9.7 sec.
Washing	26° C.	9.0 sec.
Squeezing		2.4 sec.
Drying	55° C.	8.3 sec.
Total (Dry to Dry)		43.4 sec.

Developer (for 12 liter)

Potassium hydroxide	450 g
Potassium sulfite (50% aq. solution)	2280 g
Diethylentriamine pentaacetic acid	120 g
Sodium hydrogencarbonate	132 g
5-Methylbenzotriazole	1.2 g
1-Phenyl-5-mercaptoimidazole	0.2 g
Hydroquinone	340 g
Water to make	5000 ml

Starter

Glacial acetic acid	170 g
Triethylene glycol	185 g
1-Phenyl-3-pyrazolidone	22 g
5-Nitroimidazole	0.4 g

Fixer (for 18 liter)

Glacial acetic acid	120 g
Potassium bromide	225 g
Water to make	1 liter

Ammonium tetrathionate (70 wt/vol %)	6000 g
Sodium sulfite	110 g
Sodium acetate trihydrate	450 g
Sodium citrate	50 g
Gluconic acid	70 g
1-(N,N'-dimethylamino)-ethyl-5-mercaptopotassium	18 g

Aluminum sulfate	800 g
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To 5 liters of water were simultaneously added part A and B of the developer with stirring, and water was further added thereto to make 12 liters of the developer. The pH was adjusted to 10.40. This developer solution was employed as a replenisher.

To 1 liter of this replenisher was added 20 ml of the starter and the pH was adjusted to 10.26 to make a working solution.

To 5 l of water was added part A of the fixer with stirring and water was further added thereto to make 18 liters, and the pH was adjusted to 4.4 using sulfuric acid or NaOH to make up a fixer replenisher.

Process-2

Using a modified processor of the SRX-501 used in Process-1 and the same developer and fixer solutions as in Process-1, photographic material samples were processed according to the following steps:

Developing	38° C.	7 sec.
Fixing	37° C.	4 sec.
Washing	26° C.	7 sec.
Squeezing		2.4 sec.
Drying	58° C.	4 sec.
Total (Dry to Dry)		24.4 sec.

Sensitivity was shown as a relative value of reciprocal of exposure necessary to give a density of fog plus 1.0, based on the sensitivity of sample 1 being 100.

Evaluation of Pressure Resistance

After unexposed samples were allowed to stand for 2 hr. under conditions at 23° C. and 40% RH, the surface of each sample was scratched by a sapphire needle of 0.1 mm in diameter with continuously increasing load from 0 to 200 g, using a continuously loading scratch tester, HEIDON type 18 (which is available from Shinjo Kagaku Corp.) and then subjected to processing according to the Process-1. The load necessary to give a density of fog plus 0.1 was determined as a measure of pressure resistance. Thus, the more this value, the better pressure resistance.

Evaluation of Roller Stain

After 2,000 sheets of 250 mmx300 mm of each sample were continuously processed according to Process-1 or Process-2, a cross-over roller provided between developing and fixing baths of the processor was observed with respect to stain attached to the roller. Roller stain was evaluated based on the following criteria:

A. No stain observed,

B. Slight stain observed but acceptable for practice,

C. Marked stain observed and substantially non-

acceptable for practice.

D. Stains were observed on all sides and completely nonacceptable for practice.

Results are summarized in Table 1.

US-CL-CURRENT: 385/109; 385/113

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KVMC

☐ 8. Document ID: US 5227753 A

L7: Entry 8 of 16

File: USPT

Jul 13, 1993

US-PAT-NO: 5227753

DOCUMENT-IDENTIFIER: US 5227753 A

TITLE: Electron beam adjusting device

DATE-ISSUED: July 13, 1993

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hirai; Masatoshi	Mooka			JPX
Nishida; Shigeo	Mooka			JPX

US-CL-CURRENT: 335/212; 313/431

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KVMC

☐ 9. Document ID: US 5028347 A

L7: Entry 9 of 16

File: USPT

Jul 2, 1991

US-PAT-NO: 5028347

DOCUMENT-IDENTIFIER: US 5028347 A

TITLE: Flame-retardant magnetic composite resin composition

DATE-ISSUED: July 2, 1991

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
An; Tae W.	Seoul			KRX
Kim; Jae K.	Seoul			KRX
Park; Kyung N.	Seoul			KRX
Seo; Jae K.	Seoul			KRX

US-CL-CURRENT: 252/62.54; 252/609

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KVMC

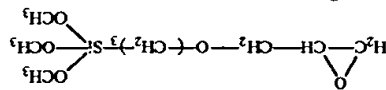
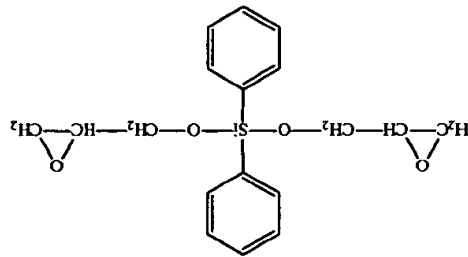
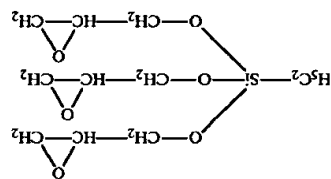
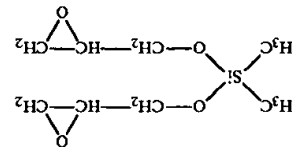
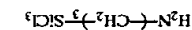
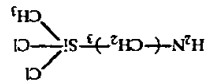
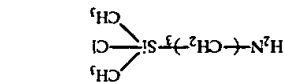
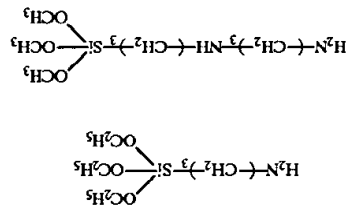
☐ 10. Document ID: US 4900804 A

L7: Entry 10 of 16

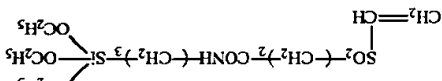
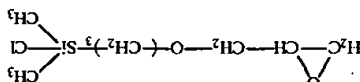
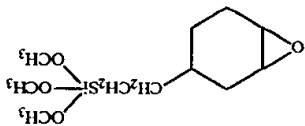
File: USPT

Feb 13, 1990

Silane coupling agents are preferably employed in the tabular silica dispersion according to the invention. Silane coupling agents usable in the invention may be those containing a functional group capable of crosslinking gelatin, as described in JP-B 48-3565 and JP-A 58-38950, 59-42540 and 62-209452, and preferably those containing an amino and/or epoxy group. Exemplary examples of the silane coupling agents are shown below, but are not limited to these examples.



-continued



The silane coupling agent may be used alone or in combination. Reaction of the silane coupling agent with the tabular silica is preferably conducted by allowing a silane coupling agent to react with tabular silica dispersed in water or an organic solvent.

The tabular silica dispersion used in the invention can be prepared, for example, according to the following manner.

After mixing a gelatin aqueous solution, a dispersion of tabular silica in water, a cyclodextrin aqueous solution or an aqueous solution of a cyclodextrin capable of crosslinking with gelatin, a compound capable of crosslinking gelatin in limited amounts was added to the mixture, while maintaining a temperature at 30 to 80° C. and stirring with a high-speed stirrer with sufficient shearing force (e.g., homomixer, impeller, etc.), and the mixture was further dispersed over a period of 1 to 72 hr. to obtain the dispersion.

In the invention, the tabular silica is surrounded by gelatin or cyclodextrin. Thus, it is contemplated that the tabular silica is miscible with gelatin, which is hardened with hardener, so that prevention of possible cracking is to be expected.

In preparation of the dispersion, to enhance miscibility of the tabular silica with gelatin is preferably used a silane coupling agent, as described in JP-A 4-257849 and 6-95300.

To prevent coagulation is optionally employed a dispersing agent, including polyphosphates such as sodium pyrophosphate, sodium hexametaphosphate and sodium trimethylolpropane, polybutoxyl alcohol such as sorbitol, trimethylolpropane, trimethylolmethane and trimethylolmethane; and nonionic polymer such as polyethylene glycol alkyl ester.

Exemplary, preferred tabular silica dispersion are shown below.

Dispersion Example 1 (B-1)

Alkali-processed gelatin of 150 g was dissolved in 7650 ml of water, further thereto was added 1100 ml of a 10% β -cyclodextrin aqueous solution while maintaining a temperature of 40° C. and thereafter, was added 1000 g of Russenite SWN (30 wt. % aqueous dispersion, average particle diameter of 14 nm and available from Cope Chemical Corp.). To the resulting solution was added 220 ml of 3.7% formalin solution in limited amounts in 1 min, while stirring with a high-speed homogenizer and stirring continued further for 5 hr at 50° C. The resulting dispersion was filtered with a filter with pores of 3 μ m in diameter to remove coagulates.

Dispersion Example 2 (B-2)

Alkali-processed gelatin of 150 g was dissolved in 7650 ml of water, further thereto was added 1100 ml of a 10% β -cyclodextrin aqueous solution while maintaining a temperature of 40° C. and thereafter, was added 1000 g of Russenite SWN (30 wt. % aqueous dispersion, average particle diameter of 14 nm and available from Cope Chemical Corp.). To the resulting solution was added 220 ml of 3.7% formalin solution in limited amounts in 1 min, while stirring with a high-speed homogenizer and stirring continued further for 5 hr at 50° C. The resulting dispersion was filtered with a filter with pores of 3 μ m in diameter to remove coagulates.

US-PAT-NO: 4900804

DOCUMENT-IDENTIFIER: US 4900804 A

TITLE: Aromatic polyesters, polyesteramides, and compositions thereof

DATE-ISSUED: February 13, 1990

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wakui; Tadahiro	Chiba			JPX
Yoshino; Kenji	Chiba			JPX
Komatsu; Masafumi	Chiba			JPX
Kumazawa; Yumiko	Chiba			JPX
Yamagishi; Touru	Chiba			JPX
Izumi; Mitsuhiko	Chiba			JPX

US-CL-CURRENT: 528/332; 524/601, 524/602, 524/604, 524/607, 528/176, 528/179, 528/193, 528/219, 528/271

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KIMC

☐ 11. Document ID: US 4851497 A

L7: Entry 11 of 16

File: USPT

Jul 25, 1989

US-PAT-NO: 4851497

DOCUMENT-IDENTIFIER: US 4851497 A

TITLE: Aromatic polyesters, polyesteramides, and compositions thereof

DATE-ISSUED: July 25, 1989

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wakui; Tadahiro	Chiba			JPX
Yoshino; Kenji	Chiba			JPX
Komatsu; Masafumi	Chiba			JPX
Kumazawa; Yumiko	Chiba			JPX
Yamagishi; Touru	Chiba			JPX
Izumi; Mitsuhiko	Chiba			JPX

US-CL-CURRENT: 528/176; 524/601, 528/179, 528/190, 528/191, 528/193, 528/194, 528/211, 528/219, 528/271

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KIMC

☐ 12. Document ID: US 4849469 A

L7: Entry 12 of 16

File: USPT

Jul 18, 1989

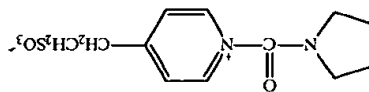
US-PAT-NO: 4849469

DOCUMENT-IDENTIFIER: US 4849469 A

β -dextrans aqueous solution while maintaining a temperature of 40° C. and thereafter, was added 1000 g of Russettine SWN used in the above-described B-1, to which 3.0 g of 3-glycidyloxypropyltrimethoxysilane (corresponding to 5 accounted for by tabular grains having an aspect ratio of 2 or more. The proportion of the tabular grains is preferably 60% or more, more preferably 70% or more, still more preferably 80% or more. The aspect ratio refers to a ratio of projected area of the tabular grain, to a distance between parallel planes (i.e., thickness). The aspect ratio according to the invention is preferably not less than 2 and less than 20, and more preferably not less than 3 and less than 16. The thickness of the tabular grains is preferably not more than 0.5 μ m, and more preferably 0.3 μ m. A monodisperse tabular grain emulsion is preferred, having a variation coefficient of deviation (S) of circular equivalent diameter described above, divided by an average diameter (D), i.e., S/D, is preferably not more than 30%, and more preferably not more than 20%. Tabular grains may be blended with non-tabular, regular crystal grains.

There may be used silver halide solvents such as ammonium, thiocarbonyl compounds and thione compounds as control grain growth of tabular grains. Metal salts such as zinc, thallium, iridium and rhodium may be copresent during physical ripening or chemical ripening. Sulfur sensitization, selenium sensitization, tellurium sensitization, reduction sensitization, noble metal sensitization, and combination thereof can be employed in chemical ripening. Sulfur sensitizers usable in the invention include those described in U.S. Pat. Nos. 1,574,944, 2,410,689, 2,278,947, 2,728,668, 3,501,313, and 3,656,955; West German Patent (OLS) 1,492,869; JP-A-56-24937 and 55-45016. Preferred examples thereof include thiourea derivatives such as 1,3-diphenylthiourea, triethylthiourea, 1-ethyl-3-(2-thiazolyl)thiourea, etc.; rhodamine derivatives; dithiacarbamic acid derivatives; polysulfide organic compounds; and sulfur simple substance. Of sulfur simple substances is preferred rhombic α -sulfur.

Selenium sensitization includes a variety of selenium sensitizers, as disclosed in U.S. Pat. Nos. 1,574,944, 1,602,592, 1,623,499, JP-A-60-150046, 4-25832, 4-109240 and 4-172250. Usable selenium sensitizers include colloidal selenium, isoselenocyanates (e.g., allyl isoselenocyanate), selenouras (e.g., N,N'-dimethylselenouras, N,N'-trichloromethylselenouras, N,N'-trichloromethyl-N'-heptafluoromethylselenouras, N,N'-trichloromethyl-N'-heptafluoropropylcarboxylselenouras, N,N'-trimethyl-N'-4-nitrophenylcarboxylselenouras), selenoamides (e.g., selenoacetone, selenoacetophenone), selenoamides (e.g., selenoacetamide, N,N'-dimethylselenoacetamide), selenocarboxylic acids and selenocesters (e.g., 2-selenopropionic acid methyl-3-selenobutyrate), selenophosphates (tri-p-triselenophosphate) and selenides (triphenylphosphine selenide, diethylselenide, diethylselenide). Among these sensitizers are preferable selenouras, selenoamides, selenocesters and selenides. Techniques for using selenium sensitizers are exemplarily described in U.S. Pat. Nos. 1,574,944, 1,602,592, 1,623,499, 3,297,446, 3,297,447, 3,320,069, 3,408,196, 3,408,197, 3,442,653, 3,420,670 and 3,591,385; French Patent 2,693,038 and 2,093,209; JP-B-52-34491, 52-34492, 53-295 and 57-22090; JP-A-59-180536, 59-185330, 59-181337, 59-187338, 59-192241, 60-150046, 60-151637, 61-246738,



compound RH:

hardening agent was replaced by the following Dispersion Example 3 (B-3) Dispersion B-3 was obtained in a manner similar to B-1, except that the

Dispersion B-4 was obtained in a manner similar to B-1, except that the alkali-processed gelatin was replaced by an equivalent amount of an acid-processed gelatin.

Dispersion Example 5 (B-5)

Dispersion B-5 was obtained in a manner similar to B-1, except that the β -cyclodextrin was replaced by cyclodextrin K1, capable of crosslinking gelatin.

Dispersion Example 6 (B-6)

Dispersion B-6 was obtained in a manner similar to B-1, except that the β -cyclodextrin was replaced by cyclodextrin K2, capable of crosslinking gelatin.

Dispersion Example 7 (B-7)

Dispersion B-7 was obtained in a manner similar to B-2, except that the β -cyclodextrin was replaced by cyclodextrin K1, capable of crosslinking gelatin.

Dispersion Example 8 (B-8)

Dispersion B-8 was obtained in a manner similar to B-2, except that the β -cyclodextrin was replaced by cyclodextrin K2, capable of crosslinking gelatin.

The tabular silica dispersion according to the invention is preferably in an amount of 0.05 to 1.0%, and 0.1 to 0.7% by dry weight, based on gelatin used as binder in the layer to be incorporated. The gelatin used as binder in the tabular silica dispersion include gelatin contained in the silver halide grains used in photographic materials according to the invention are preferably tabular grains to achieve high sensitivity. Halide composition is optional, including AgBr, AgCl, AgClBr, AgClBrI and AgBrI. Of these silver halide is preferred AgBrI containing high bromide.

The tabular grains, which are described in U.S. Pat. Nos. 4,439,520, 4,425,425 and 4,414,304, can be readily obtained in desired forms. In tabular grains, it is possible to allow silver grown at a specific position on the surface or to be shelled.

TITLE: Void control in thermoplastics containing silicone interpenetrating polymer networks

DATE-ISSUED: July 18, 1989

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Crosby; Jane M.	Wilmington	DE		
Hutchins; MaryGail K.	Philadelphia	PA		
Ward; Susan K.	Phoenixville	PA		

US-CL-CURRENT: 524/439, 524/400, 524/438, 524/440, 524/441, 524/500, 524/537, 524/539,
524/540, 524/542, 524/861, 524/862, 524/866, 525/100, 525/104, 525/106, 525/422,
525/425, 525/426, 525/427, 525/431, 525/903

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KWMC

☐ 13. Document ID: US 4839128 A

L7: Entry 13 of 16

File: USPT

Jun 13, 1989

US-PAT-NO: 4839128

DOCUMENT-IDENTIFIER: US 4839128 A

TITLE: Low-temperature-processible copolyesteramides, preparation of molded articles therefrom and compositions thereof

DATE-ISSUED: June 13, 1989

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Yoshino; Kenji	Chiba			JPX
Wakui; Tadahiro	Chiba			JPX
Kumazawa; Yumiko	Chiba			JPX
Izumi; Mitsuhiko	Chiba			JPX
Yamagishi; Touru	Chiba			JPX

US-CL-CURRENT: 264/328.1, 524/435, 524/456, 524/602, 524/605, 524/779, 524/785,
524/876, 528/183, 528/184, 528/185, 528/193

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KWMC

☐ 14. Document ID: US 4831071 A

L7: Entry 14 of 16

File: USPT

May 16, 1989

US-PAT-NO: 4831071

DOCUMENT-IDENTIFIER: US 4831071 A

TITLE: Enhanced melt extrusion of thermoplastics containing silicone interpenetrating polymer networks

DATE-ISSUED: May 16, 1989

3-4221, 3-24537, 3-111838, 3-116132, 3-148648, 3-237450, 4-16838, 4-25832, 4-32831, 4-4-96059, 4-109240, 4-1407384-140739, 4-147250, 4-149437, 4-184331, 4-190225, 4-191729, and 4-195035; English Patent 255846 and 861984; and H. E. Spence et al., *Journal of Photographic Science* Vol. 31, page 158-169 (1983).

The amount of the selenium sensitizer to be used depends on a selenium compound, silver halide grains and chemical ripening conditions, and in general, are within a range of 10^{-8} to 10^{-4} mol per mol of silver halide. According to properties of a selenium compound to be used, it may be added by a method in which it is dissolved in water or an organic solvent such as methanol or ethanol, a method in which it has been previously mixed a gelatin solution, by a method disclosed in JP-A-4-140739, thus in the form of a dispersion of mixture solution with an organic solvent-soluble polymer. Chemical ripening with a selenium sensitizer is carried out at a temperature of 40 to 90°C., and a pH of 4 to 9, preferably 6 to 9.5.

Tellurium sensitizers and sensitizing methods are described in U.S. Pat. Nos. 1,623,499, 3,320,069, 3,772,031, 3,655,394, British Patent 235,211, 1,121,496, 1,295,462, 1,396,696, Canada Patent 800,958, JP-A-4-204640 and 4-33043. Examples of usable tellurium sensitizers include tellurates (e.g., N,N'-dimethyltellurates, N,N'-tetramethyltellurates, N-carboxyethyl-N,N'-dimethyltellurates, N,N'-dimethyl-N'-phenyltellurates), phosphine tellurides (e.g., tributylphosphine telluride, triisopropylphosphine telluride, triisopropylphosphine telluride, butyldiisopropylphosphine telluride, dibutylphenylphosphine telluride), telluroacetamides (e.g., N,N'-dimethyltelluroacetamides, telluroketones, telluroesters, isoltellurocyanates. The tellurium sensitizer can be used in a manner similar to the selenium sensitizer.

Reduction sensitization is also preferably employed in combination with other sensitization. The reduction sensitization is preferably conducted during the course of grain growth. Examples thereof include not only a method in which growing silver halide grains are subjected to reduction sensitization, but also a method in which grain growth is interrupted, reduction sensitization is conducted and then reduction-sensitized grains are further allowed to be grown. Gold sensitizers usable in the invention include not only chlorauric acid, gold thiosulfates and gold thiocyanates, but also gold complexes of thioureas, rhodanines and other compounds.

The amount to be used of sulfur sensitizers, selenium sensitizers, tellurium sensitizers or gold sensitizers may be added through solution in water, alcohols or other organic or inorganic solvents, or in the form of an emulsified dispersion using a water-insoluble solvent or a medium such as gelatin. Spectral sensitizing dyes may be added at the time of grain growth or at any time of from after grain formation to coating, and preferably added before completion of desalting. The pH at the time of addition to a reaction solution (conventionally, in a reaction vessel), is preferably 4 to 10, and more preferably 6 to 9; and the pAg of a reaction

solution (in a reaction vessel) is preferably 5 to 11. Spectral sensitizing dyes used in the invention are optional. Cyanine dyes are preferably used. Specifically, compounds S-1 to S-124 represented by general formulas (I) to (III) described in JP-A-1-100533, are preferably used. Sensitizing dyes may be used alone or in combination thereof, wherein two or more dyes may be added at the same time or separately. The addition amount thereof is 1 to 1000 mg, and more preferably 5 to 500 mg per mol of silver. Potassium iodide is preferably added prior to addition of a spectral sensitizing dye. Spectral sensitizing dyes may be directly dispersed in an emulsion, or incorporated in a solution form, through solution in an appropriate solvent, such as methanol, ethanol, methyl cellosolve, acetone, pyridine or a mixture thereof, in which ultrasonic homogenizer may be employed in dissolution. Water-insoluble spectral sensitizing dyes may be incorporated in the form of a solid particle dispersion by means of high-speed impeller dispersion.

Mating agents may be employed, including fine particles of homopolymers such as polymethyl methacrylate, copolymer of methyl methacrylate and methacrylic acid, organic compounds such as starch, and inorganic compounds such as silica, titanium dioxide, strontium sulfate and barium sulfate, as described in U.S. Pat. Nos. 2,992,101, 2,701,245, 4,142,894 and 4,396,706. The particle size is preferably 0.6 to 10 μ m, and more preferably 1 to 5 μ m.

Lubricants used in the surface layer of photographic materials used in the invention include silicone compounds described in U.S. Pat. Nos. 3,489,576 and 4,047,958, colloidal silica described in JP-B-56-23139, paraffin wax, higher fatty acids and starch derivatives.

Plasticizers such as trimethylol propane, pentaerythritol, butane diol, ethylene glycol and glycerin may be added in a component layer of the photographic material.

Polymeric latexes may be incorporated to enhance pressure resistance to a component layer of the photographic material. Preferred examples of latex polymers include homopolymer of an alkyl acrylate, copolymer of acrylic acid and styrene, copolymer of styrene and butadiene, and a polymer comprised of a monomer containing an active methylene group, water-solubilizing group or a group capable of crosslinking gelatin or its copolymer. Specifically, to enhance miscibility with gelatin is preferably employed a copolymer comprised of a hydrophobic monomer, as a main component, such as alkyl acrylate or styrene and a monomer containing water-solubilizing group or a group capable of crosslinking gelatin. Examples of the monomer containing a water-solubilizing group include methacrylic acid, maleic acid, 2-acrylamido-2-methylpropane-sulfonic acid and styrenesulfonic acid. Examples of the monomer containing a group capable of crosslinking gelatin include glycidyl acrylate, glycidyl methacrylate and N-methylol acrylamide.

The polymeric latex is preferably incorporated in an amount of 0.1 to 1.0 g/m².

To photographic materials used in the invention are incorporated various kinds of photographic adjuvants in accordance with various purposes. As the adjuvants, can be employed compounds as described in Research Disclosure (RD) No. 17643 (December, 1978), No. 18716 (November, 1979) and No. 308119 (December, 1989), wherein relevant types of compounds and sections thereof are as follows.

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ward; Susan K.	Phoenixville	PA		
O'Brien; Gregory S.	Malvern	PA		

US-CL-CURRENT: 524/401, 524/439, 524/440, 524/441, 524/500, 524/537, 524/538, 524/539,
524/540, 524/542, 524/861, 524/862, 524/866, 525/100, 525/104, 525/106, 525/422,
525/425, 525/426, 525/427, 525/431, 525/903

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KVMC

☐ 15. Document ID: US 4695602 A

L7: Entry 15 of 16

File: USPT

Sep 22, 1987

US-PAT-NO: 4695602

DOCUMENT-IDENTIFIER: US 4695602 A

TITLE: Fiber reinforced thermoplastics containing silicone interpenetrating polymer networks

DATE-ISSUED: September 22, 1987

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Crosby; Jane M.	Wilmington	DE		
Hutchins; MaryGail K.	Philadelphia	PA		

US-CL-CURRENT: 524/439, 251/368, 524/440, 524/441, 524/500, 524/514, 524/537, 524/538,
524/539, 524/540, 524/542, 525/100, 525/104, 525/106, 525/422, 525/425, 525/426,
525/427, 525/431, 525/903

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KVMC

☐ 16. Document ID: SU 981325 A

L7: Entry 16 of 16

File: DWPI

Dec 15, 1982

DERWENT-ACC-NO: 1983-793508

DERWENT-WEEK: 198342

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TITLE: Prepn. of non-flammable magnetic moulding compsn. - introduction of fire retardant after ferrite powder into polyolefin resin melt

INVENTOR: BAZHUTINA, I G; GUZHVENKO, V P ; IONCHENKOV, A N

PRIORITY-DATA: 1981SU-3301324 (June 8, 1981)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
SU 981325 A	December 15, 1982		004	

INT-CL (IPC): C08L 23/02; C09K 3/28

Example 1

Preparation of Seed Emulsion-1 was prepared in the following manner.

Solution A1	
Osselin gelatin	24.2 g
Water	9657 ml
Sodium polyisopropylene-polyethyleneoxy-disuccinate (10% ethanol solution)	6.78 ml
Potassium bromide	10.8 g
10% Nitric acid	114 ml
Solution B1	
2.5 N Silver nitrate aqueous solution	2825 ml
Solution C1	
Potassium bromide	824 g
Potassium iodide	23.5 g
Water to make	2825 ml

To Solution A1 maintained at 35° C. were added Solutions B1 and C1, each 464.3 ml for 1.5 min, with stirring by a mixer described in JP-B 58-58288 and 58-58299 to form nuclear grains (or seed grains).

Thereafter, Solution A1 was heated to 60° C. taking 60 min. After adjusting the pH to 5.0, solutions B1 and C1 were simultaneously added thereto at a flow rate of 55.4 ml/min. over a period of 42 min. During the course of a temperature-increase of 42 to 60° C. and addition of Solutions B1 and C1, Ag-potential was controlled at +8 mV and +16 mV with Solution D1, respectively. After completing addition, the pH was adjusted to 6 with 3% KOH aqueous solution and the resulting emulsion was desalted to obtain a seed emulsion-1. The emulsion was proved to be comprised of hexagonal tabular grains accounting for 90% of the projected area of total grains and having a maximum adjacent edge ratio of 1.0 to 2.0, an average thickness of 0.06 μ m, an average diameter (circular equivalent diameter) of 0.59 μ m, a variation coefficient of thickness of 40% and a variation coefficient of spaces between twin planes of 42%.

Preparation of Emulsion Em-1

Using seed emulsion-1 prepared above and four solutions as shown below, an emulsion Em-1 containing silver halide tabular grain having core/shell structure, was prepared in the following manner.

Solution B2	
Osselin gelatin	11.7 g
Sodium polyisopropylene-polyethyleneoxy-disuccinate (10% ethanol solution)	1.4 ml
Seed emulsion-1	0.10 mole eq.
Water to make	550 ml
Solution A2	
Osselin gelatin	5.9 g
Potassium bromide	6.2 g
Potassium iodide	0.8 g

Additive	RD-17643	RD-18716	RD-308119
Chemical sensitizer	23	III	996
Sensitizing dye	23	IV	996-649
Desensitizing dye	23-26	VIII	998
Dye	29	XXI	649-650
Developing accelerator	24	VI	998-1000
Anti-fogging/stabilizer	24	V	998
Hardening agent	26	X	651 left
Surfactant	26-27	XI	650 right
Antistatic agent	27	XIII	650 right
Plasticizer	27	XII	650 right
Lubricant	27	XII	650 right
Mattening agent	23	XVI	650 right
Binder	26	IX	651 left
Support	28	XVII	1009

In cases where photographic materials according to the invention are employed as a double emulsion X-ray film for medical use, it is preferable to provide a cross-over light-shielding layer. Into the cross-over light shielding layer is preferably incorporated a dye in the form of a solid particle dispersion. Such a dye is not specifically limited, as far as the dye is soluble in an alkaline solution with a pH of 9 or more and scarcely soluble in a solution with a pH of 7 or less; and compounds of formula (I) described in JP-A 6-30870 are preferably employed in terms of discoloration characteristics in processing.

Supports usable in photographic materials used in the invention are described in above-described RD 17643, page 28 and RD 308119, page 1009.

Photographic materials according to the invention exhibit superior performance in rapid processing with an automatic processor in a total processing time of 15 to 60 sec.

The temperature and time of developing or fixing in the rapid processing are preferably 25 to 50° C. and 25 sec or less, and more preferably 30 to 40° C. and 4 to 15 sec, respectively. The photographic material is developed, fixed and then washed. Washing by counter current flow with multiple stage can be conducted to save water when washed with a small amount of water, it is preferred to provide a squeezing roller in a washing bath. The photographic material which has been developed, fixed and washed, was dried via a squeezing roller. Drying is conducted at a temperature of 40 to 80° C. for a period of 4 to 30 sec. The total processing time refers to from the time of the top of a photographic material film being inserted into the inlet of the processor to the time of the top coming out of the drying outlet via a developing bath, cross-over section, fixing bath, cross-over section, washing bath, cross-over section and drying zone. The amount of gelatin used in photographic materials according to the invention can be reduced without deteriorating pressure characteristics, enabling rapid processing within a total processing time of 15 to 30 sec. without lowering any of developing rate, fixing rate and drying rate.

EXAMPLES

Embodiments of the present invention will be further explained, based on examples but the present invention is not limited to these examples.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Drawn Desc	Image								

KWC

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Term	Documents
MAGNETIC.DWPI,TDBD,EPAB,JPAB,USPT,PGPB.	1084289
MAGNETICS.DWPI,TDBD,EPAB,JPAB,USPT,PGPB.	9796
POWDER.DWPI,TDBD,EPAB,JPAB,USPT,PGPB.	771440
POWDERS.DWPI,TDBD,EPAB,JPAB,USPT,PGPB.	168524
BARIUM.DWPI,TDBD,EPAB,JPAB,USPT,PGPB.	108250
BARIUMS.DWPI,TDBD,EPAB,JPAB,USPT,PGPB.	16
BARIA.DWPI,TDBD,EPAB,JPAB,USPT,PGPB.	435
BARIAS.DWPI,TDBD,EPAB,JPAB,USPT,PGPB.	1
FERRITE.DWPI,TDBD,EPAB,JPAB,USPT,PGPB.	80850
FERRITES.DWPI,TDBD,EPAB,JPAB,USPT,PGPB.	7017
(MAGNETIC POWDER AND BARIUM FERRITE AND (FLAME OR FIRE) RETARDANT).USPT,PGPB,JPAB,EPAB,DWPI,TDBD.	16

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Sensitizing dye (A); 5,5'-Dichloro-9-ethyl-3,3'-di-(sulfonyl)oxacarbonyl sodium salt anhydride, 3'-di-(4-sulfonyl)benzimidazolocarbonyl sodium salt anhydride. On both sides of blue-tinted polyethylene terephthalate film base for use in X-ray with a thickness of 175 μ m were simultaneously coated a cross-over light shielding layer, emission layer, and protective layer in this order so as to have coating amounts as shown below and dried. 1st Layer (Cross-over light shielding layer)

50	mg/m ²	Gelatin
0.4	g/m ²	Sodium dodecylbenzene sulfonate
5	mg/m ²	Compound (I)
5	mg/m ²	Sodium 2,4-dichloro-6-hydroxy-1,3,5-triazine
0.2	mg/m ²	Latex (L)
50	mg/m ²	Poly(potassium styrenesulfonate)

2nd Layer (Emission layer)

To the emulsions prepared as above were added the following additives.

100	mg/m ²	Potassium tetrachloropalladate (II)
0.5	mg/m ²	Compound (G)
5	mg/m ²	2,6-Bis (hydroxyamino)-4-dichloro-1,3,5-triazine
130	mg/m ²	t-Butyl-catechol
35	mg/m ²	Polyvinyl pyrrolidone (having a molecular weight of 10,000)
80	mg/m ²	A styrene-maleic acid anhydride copolymer
80	mg/m ²	Poly(sodium styrenesulfonate)
350	mg/m ²	Trimethylolpropane
50	mg/m ²	Dibutylene glycol
20	mg/m ²	Nitrophenyl-triphenyl-phosphonium chloride
500	mg/m ²	Ammonium 1,3-dihydroxybenzenesulfonate
5	mg/m ²	Sodium 2-mercaptopbenzenesulfonate
0.5	mg/m ²	Compound (H)
350	mg/m ²	n-C ₁₂ H ₂₅ OC ₂ H ₄ N(CH ₂ COOH) ₂
5	mg/m ²	Compound (M)
5	mg/m ²	Compound (N)
5	mg/m ²	Latex (L)
0.4	g/m ²	Gelatin was adjusted to be in an amount shown in Table 2.

3rd Layer (Protective layer)

0.8	g/m ²	Gelatin
50	mg/m ²	4-Hydroxy-6-methyl-1,3,3a,7-tetraazindene
50	mg/m ²	Methacrylic acid copolymer containing polyvinyl methylacrylate (having an average particle-size of 7 μ m)
100	mg/m ²	Tabular silica dispersion in an amount shown in Table 2
10	mg/m ²	[CH ₂ =CH-SO ₂ -CH ₂ CONHCH ₂] ₂
10	mg/m ²	Sodium 2,4-dichloro-6-hydroxy-1,3,5-triazine
36	mg/m ²	Bis-vinylsulfonimethyl ether
0.2	mg/m ²	Latex (L)
0.1	mg/m ²	Polyacrylamide (mean M.W. of 10,000)
30	mg/m ²	Poly(sodium acrylate)
20	mg/m ²	Compound (SI)
12	mg/m ²	Compound (I)
2	mg/m ²	Compound (J)
7	mg/m ²	Compound (S-1)
15	mg/m ²	Compound (K)
50	mg/m ²	Compound (O)
5	mg/m ²	Compound (S-2)
3	mg/m ²	Compound (F-1)
2	mg/m ²	Compound (F-2)
1	mg/m ²	Compound (F-3)

-continued-

5	Water to make	145 ml
Solution C2		
15	Oxsein gelatin	6.1 g
	Potassium bromide	94 g
	Water to make	304 l
Solution D2		
20	Silver nitrate	10.1 g
	Water to make	145 ml
Solution E2		
20	Silver nitrate	137 g
	Water to make	304 ml

To solution A2 with stirring at 67° C. were added solutions B2 and C2 by the double jet method in 58 min. Subsequently, solutions D2 and E2 were added by the double jet method in 48 min., while the pH and pAg were maintained at 5.8 and 8.7, respectively. After completing the addition, the emulsion was further desalted. There was obtained an emulsion having a pAg of 8.5, a pH of 5.58 and a mean iodide content of 0.5 mol %. The resulting emulsion was comprised of tabular silver halide grains having an average diameter of 0.96 μ m, an average thickness of 0.25 μ m, an average aspect ratio of 4.5 and a width of grain size distribution of 1.19%, accounting for 81% of the total grain projected area. It was proved that the mean spacing between twin planes (a) was 0.019 μ m and a coefficient of variation of the (a) was 28%.

The obtained emulsion (Em-1) was heated to 60° C. and sensitizing dyes were added thereto in given amounts, in the form of a solid particle dispersion. Further thereto were added aqueous solutions of adenine, ammonium thiocyanate, chloroauric acid and sodium thiosulfate and a solution obtained by dissolving triphenylphosphine selenide in a mixed solvent of ethyl acetate and methanol; after 60 min., a fine silver iodide grain emulsion was added thereto and ripening was conducted over a total period of 2 hr. After completion of ripening, a given amount of 4-hydroxy-6-methyl-1,3,3a,7-tetraazindene (TAl) was added as a stabilizer.

The above addenda and amounts (per mol of AgX) were as follows:

120	mg	Sensitizing dye (A)
2.0	mg	Sensitizing dye (B)
15	mg	Adenine
95	mg	Ammonium thiocyanate
2.5	mg	Chloroauric acid
2.0	mg	Sodium thiosulfate
0.4	mg	Triphenylphosphine selenide
280	mg	Fine silver iodide grain
50	mg	4-Hydroxy-6-methyl-1,3,3a,7-tetraazindene

The solid particle dispersion of the spectral sensitizing dyes was prepared in accordance with a method described in JP-A-5-297496. Thus, a given amount of the sensitizing dye was added to water maintained at 27° C. and the mixture was stirred with a high-speed stirrer (Dissolver) at 500 rpm over a period of 30 to 120 min. to obtain the dispersion.

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Search Results - Record(s) 1 through 16 of 16 returned.☐ 1. Document ID: US 20020039667 A1

L7: Entry 1 of 16

File: PGPB

Apr 4, 2002

PGPUB-DOCUMENT-NUMBER: 20020039667

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020039667 A1

TITLE: Composite magnetic material and magnetic molding material, magnetic powder compression molding material, and magnetic paint using the composite magnetic material, composite dielectric material and molding material, powder compression molding material, paint, prepreg, and substrate using the composite dielectric material, and electronic part

PUBLICATION-DATE: April 4, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Takaya, Minoru	Tokyo		JP	
Akachi, Yoshiaki	Tokyo		JP	
Kobuke, Hisashi	Tokyo		JP	
Endo, Toshikazu	Tokyo		JP	

US-CL-CURRENT: 428/692; 428/323

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWC
Draw Desc	Image										

☒ 2. Document ID: US 6337031 B1

L7: Entry 2 of 16

File: USPT

Jan 8, 2002

US-PAT-NO: 6337031

DOCUMENT-IDENTIFIER: US 6337031 B1

TITLE: Flame-retardant resin magnet material

DATE-ISSUED: January 8, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ida, Takeshi	Mooka			JPX
Marutani, Naoshi	Mooka			JPX
Aoishi, Eiichi	late of Kobe			JPX

US-CL-CURRENT: 252/62.54; 252/609, 252/62.55



US006015656A

United States Patent [19] Patent Number: 6,015,656 Date of Patent: Jan. 18, 2000 Nagami

[54] TABULAR SILICA DISPERSION AND
SILVER HALIDE PHOTOGRAPHIC LIGHT
SENSITIVE MATERIAL

[75] Inventor: Ken Nagami, Hino, Japan
Assignee: Konica Corporation, Japan

[21] Appl. No.: 09/356,777
Filed: Jul. 16, 1999

[30] Foreign Application Priority Data

Jul. 21, 1998 [JP] Japan 10-204990
[51] Int. Cl.⁷ G03C 1/76; G03C 1/30;
G03C 1/04; G03C 1/047; C08L 89/00
[52] U.S. Cl. 430/531; 430/523; 430/539;
430/624; 430/626; 430/628;
430/608; 430/640; 106/144.1;
106/144.2; 106/144.6; 106/144.7; 106/157.7;
106/157.71
[58] Field of Search 430/523, 531,
430/527, 539, 623, 624, 626, 640,
621, 608, 961; 106/144.1, 144.2, 144.6,
144.7, 157.7, 157.71

[56] References Cited
U.S. PATENT DOCUMENTS

Himmelmann et al. 4/1996 3,441,412
Woodward 11/1979 4,173,480
Kawasaki et al. 10/1994 5,352,563
Vandenaebelle 12/1995 5,478,709
Nagami 8/1998 5,792,600
Takabashi 9/1998 5,807,662
Aono 2/1999 5,869,217
Majumdar et al. 4/1999 5,891,611
Majumdar et al. 430/527
430/539
430/523
430/539
430/527
430/640
430/536
430/640

Primary Examiner—Richard L. Schilling
Attorney, Agent, or Firm—Jordan B. Bierman, Bierman, Musserlian and Lucas

[57] ABSTRACT

A tabular silica dispersion is disclosed, which is obtained by mixing a tabular silica, gelatin, a cyclodextrin and a compound capable of crosslinking gelatin. Silver halide photographic materials are also disclosed, in which the tabular silica dispersion is incorporated into a silver halide emulsion layer or a light-insensitive hydrophilic colloidal layer.

15 Claims, No Drawings

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC
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☐ 3. Document ID: US 5733644 A

L7: Entry 3 of 16

File: USPT

Mar 31, 1998

US-PAT-NO: 5733644

DOCUMENT-IDENTIFIER: US 5733644 A

TITLE: Curable composition and method for preparing the same

DATE-ISSUED: March 31, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Tanaka; Seiichiro	Kitakyushu			JPX
Kato; Hanako	Kitakyushu			JPX
Sawai; Takeshi	Kitakyushu			JPX
Matsuzoe; Nobuyuki	Kitakyushu			JPX
Oba; Kenji	Kitakyushu			JPX
Kajiwarra; Yukio	Kitakyushu			JPX
Endo; Hozumi	Kitakyushu			JPX

US-CL-CURRENT: 428/215; 525/342, 525/446, 525/476, 528/27

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 4. Document ID: US 5709053 A

L7: Entry 4 of 16

File: USPT

Jan 20, 1998

US-PAT-NO: 5709053

DOCUMENT-IDENTIFIER: US 5709053 A

TITLE: Panel for constituting sound insulating wall

DATE-ISSUED: January 20, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kuroda; Hideyuki	Kanagawa			JPX

US-CL-CURRENT: 52/145; 181/284, 181/293, 52/406.2, 52/792.1, 52/792.11, 52/794.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 5. Document ID: US 5484970 A

L7: Entry 5 of 16

File: USPT

Jan 16, 1996

SUMMARY OF THE INVENTION

To solve problems described above, an object of the present invention is to provide a silver halide photographic

ing method thereof.

INVENTION

Alcuentre SWF sold by Cope Chemical Corp.

Gelatin used in the invention include alkali process diameter (denoted as D), that is, S/D \times 100%). by a circle (denoted as S) divided by an approximated deviation obtained when the projected area is approximated than 20%, wherein the variation coefficient is a standard preferably not more than 30%, and more preferably not more than 50%. A variation coefficient of tubular silica particle size distribution is preferably 1 to 150 nm, and still more preferably 10 to 50 nm. A variation coefficient of tubular silica particle size distribution is preferably 1 to 150 nm, and still more preferably 10 to 50 nm, and more preferably not more than 0.5 μm , more preferably 1 to 1.0 μm , and used in the invention is preferably not more than 1.0 μm , and explained, i.e., thickness. The thickness of the tubular silica (equivalent circle diameter) to a spacing between two parallel areas identical to the projected area (which is so-called ratio is referred to as a ratio of a diameter of a circle having from 2 to 100, and more preferably 2 to 50. The aspect ratio is preferably tubular silica having an aspect ratio of 2.5 to 100 nm. At least 50% of the projected area of the total preferably a thickness of 1 to 150 nm, and more preferably 300 nm, and more preferably 5 to 200 nm, and having a tubular silica has preferably a mean diameter of 7 to 300 nm.

enzymic-treated gelatin described in Bull. Soc. Sci. Pharm., 1966, 16, 30 (1966) and phthalated gelatin. The total amount of gelatin contained in hydrophilic colloidal layers is preferably 1.3 to 3.0 g/m², and more preferably 1.5 to 2.5

US-PAT-NO: 5484970
DOCUMENT-IDENTIFIER: US 5484970 A

TITLE: Acoustic insulator

DATE-ISSUED: January 16, 1996

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Suzuki; Masami	Odawara			JPX
Akano; Mitsuhiro	Odawara			JPX
Sugimoto; Katsumi	Tokyo			JPX
Kuroda; Hideyuki	Tokyo			JPX

US-CL-CURRENT: 181/294; 181/286, 181/290, 181/292

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KWIC

☐ 6. Document ID: US 5374462 A

L7: Entry 6 of 16

File: USPT

Dec 20, 1994

US-PAT-NO: 5374462
DOCUMENT-IDENTIFIER: US 5374462 A

TITLE: Magnetic recording medium

DATE-ISSUED: December 20, 1994

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Funaki; Keisuke	Ichihara			JPX
Ohki; Yuichi	Himeji			JPX

US-CL-CURRENT: 428/65.3; 428/141, 428/516, 428/694SG, 428/694SL, 428/694ST, 428/900

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KWIC

☐ 7. Document ID: US 5305411 A

L7: Entry 7 of 16

File: USPT

Apr 19, 1994

US-PAT-NO: 5305411
DOCUMENT-IDENTIFIER: US 5305411 A

TITLE: Dielectric optical fiber cables which are magnetically locatable

DATE-ISSUED: April 19, 1994

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Arroyo; Candido J.	Lithonia	GA		

cylchloformate, phenylchloformate, 3-hydroxyphenylchloformate, 3-methoxyphenylchloformate, 2-chloroethylchloformate, and 4-chlorophenylchloformate. Of these compounds, a 2-hydroxy-4,6-dichloro-s-triazine, epichlorohydrin, and ethylchloformate groups are preferred, and specifically, 2-hydroxy-4,6-dichloro-s-triazine group is more preferred.

The cyclodextrin in which the group capable of crosslinking gelatin has been introduced by using the compound described above, is also called a modified cyclodextrin. Thus, according to the invention, the modified cyclodextrin contains at least two groups capable of crosslinking gelatin per molecule to function as a cross-linking agent. The cyclodextrins (including those which contain a group capable of crosslinking gelatin, is added to the tabular silica dispersion, preferably in an amount of from 0.01 to 1.0 mol, and more preferably 0.05 to 0.5 mol per g of gelatin contained in the dispersion.

Exemplary examples of the cyclodextrin containing a group capable of crosslinking gelatin are shown below but are not limited to these examples:

K1: β -cyclodextrin/2-hydroxy-4,6-dichloro-s-triazine sodium salt (in which the average number of the group capable of crosslinking gelatin, per molecule is 2.3);

K2: β -cyclodextrin to which one maltose molecule is attached/2-hydroxy-4,6-dichloro-s-triazine sodium salt (in which the average number of the group capable of crosslinking gelatin, per molecule is 2.3);

K3: β -cyclodextrin/epichlorohydrin (in which the average number of the group capable of crosslinking gelatin, per molecule is 2.4);

K4: β -cyclodextrin to which one maltose molecule is attached/epichlorohydrin (in which the average number of the group capable of crosslinking gelatin, per molecule is 2.4);

K5: β -cyclodextrin/ethylchloformate (in which the average number of the group capable of crosslinking gelatin, per molecule is 2.4).

In the above, for example, K1 represents a β -cyclodextrin containing a group capable of crosslinking gelatin, which is obtained by allowing 2-hydroxy-4,6-dichloro-s-triazine sodium salt to be attached to the cyclodextrin, e.g., in the manner described below.

These compounds can be readily synthesized by the method described in German Patent OLS No. 2,357,252 and JP-A 63-83720 and 63-168643, as exemplarily shown below.

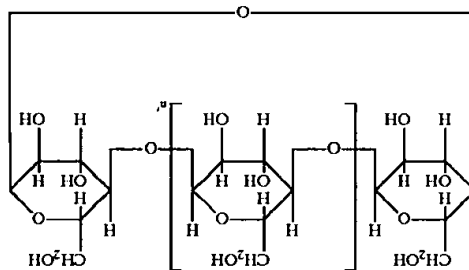
Synthesis of K1

β -Cyclodextrin of 36.0 g was dissolved in 500.0 g of water and the pH was adjusted to 8.5 with NaOH. To the resulting solution was added 41.0 g of 2-hydroxy-4,6-dichloro-s-triazine sodium salt and was stirred over a period of 5 hr, while the pH was maintained at 8 to 9 with NaOH and the temperature was kept at 15° C. The resulting reaction mixture was refined and obtained as a powdery product by the spray-drying method.

In cases where a cyclodextrin containing a group capable of crosslinking gelatin is used in the invention, the dispersion according to the invention is comprised of a tabular silica, gelatin and the cyclodextrin containing a group capable of crosslinking gelatin.

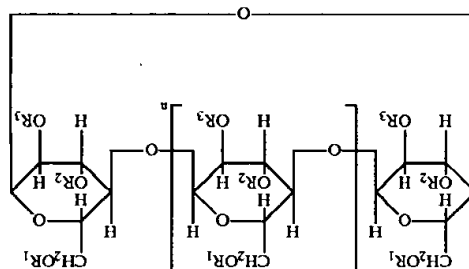
The compound capable of crosslinking gelatin includes a hardener which is capable of hardening gelatin, including aldehyde compounds, triazine compounds, vinyl compounds and carboxyl group-activating type hardeners described in JP-A 63-61243.

Cyclodextrins used in the invention may be any compound having a ring structure of cyclodextrin, including β -cyclodextrin, γ -cyclodextrin, branched cyclodextrin, which is branchedly added or bonded with glucose, maltose or saccharose; and compounds which is the above-described cyclodextrins substituted by a substituent such as an alkyl group. Cyclodextrins used in the invention are preferably those represented by the following formula (A):



where n is an integer of from 4 to 10.

Cyclodextrins which are capable of crosslinking gelatin are also preferably used in the invention. The cyclodextrins capable of crosslinking gelatin are those in which at least a part of hydroxy groups contained in the cyclodextrin represented by formula (A) above is partially modified (or substituted) with a compound capable of crosslinking gelatin, and which are preferably represented by the following formula (B):



The group capable of crosslinking gelatin may be one containing a group capable of reacting with an amino or carboxyl group contained in gelatin. The group capable of crosslinking gelatin can be introduced by using a compound which contains an alcoholic hydroxy group and a group capable of reacting with an amino or carboxyl group contained in gelatin. Examples of such a compound include 2-hydroxy-4,6-dichloro-s-triazine, epichlorohydrin, epibromohydrin, epifluorohydrin, epiodobohydrin,